## **CLAIMS**

## 1. A compound of formula (I):

$$\begin{array}{c|c}
R^{6}S(O)_{n} & R^{1} \\
R^{7} & N & N \\
R^{2} & W \\
R^{3} & (I)
\end{array}$$

wherein:

R<sup>1</sup> is (C<sub>1</sub>-C<sub>6</sub>)-haloalkyl, CN, NO<sub>2</sub> or halogen;

R2 is H, halogen or CH3;

 $R^3$  is  $(C_1-C_3)$ -haloalkyl,  $(C_1-C_3)$ -haloalkoxy or  $S(O)_p$ - $(C_1-C_3)$ -haloalkyl;

W is N or C-R4;

R4 is halogen or CH3;

A is (C<sub>2</sub>-C<sub>6</sub>)-alkylene or (C<sub>2</sub>-C<sub>6</sub>)-haloalkylene;

or is  $(C_3-C_6)$ -alkylene in which a carbon in the chain is replaced by O, S, SO, SO<sub>2</sub> or NR<sup>8</sup> with the proviso that the replacing group is not bonded to the adjacent R<sup>5</sup> or carbonyl group; or is

(C2-C6)-alkenylene or (C2-C6)-haloalkenylene; or is

 $-[(C_1-C_3)-alkyl]_{r-aryl-[(C_1-C_3)-alkyl]_{s^-}, or -[(C_1-C_3)-alkyl]_{r-heterocyclyl-[(C_1-C_3)-alkyl]_{s^-}, or -[(C_1-C_3)-alkyl]_{r-heterocyclyl-[(C_1-C_3)-alkyl]_{s^-}, or -[(C_1-C_3)-alkyl]_{r-heterocyclyl-[(C_1-C_3)-alkyl]_{s^-}, or -[(C_1-C_3)-alkyl]_{r-heterocyclyl-[(C_1-C_3)-alkyl]_{s^-}, or -[(C_1-C_3)-alkyl]_{r-heterocyclyl-[(C_1-C_3)-alkyl]_{s^-}, or -[(C_1-C_3)-alkyl]_{r-heterocyclyl-[(C_1-C_3)-alkyl]_{s^-}, or -[(C_1-C_3)-alkyl]_{s^-}, or -[(C_1-C_3)-alkyl]_{r-heterocyclyl-[(C_1-C_3)-alkyl]_{s^-}, or -[(C_1-C_3)-alkyl]_{s^-}, or -[(C_1-C_3)$ 

-[( $C_1$ - $C_3$ )-alkyl]<sub>r</sub>-( $C_5$ - $C_6$ )-cycloalkenyl-[( $C_1$ - $C_3$ )-alkyl]<sub>s</sub>-, in which last four mentioned groups the aryl, heterocyclyl, cycloalkyl and cycloalkenyl are unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, ( $C_1$ - $C_6$ )-alkyl, ( $C_1$ - $C_6$ )-haloalkyl, ( $C_1$ - $C_6$ )-alkoxy, ( $C_1$ - $C_6$ )-haloalkoxy, OR<sup>11</sup>, CN, NO<sub>2</sub>, S(O)<sub>p</sub>R<sup>10</sup>, COR<sup>10</sup>, COOR<sup>10</sup>, CONR<sup>9</sup>R<sup>10</sup>, SO<sub>2</sub>NR<sup>9</sup>R<sup>10</sup>, NR<sup>9</sup>R<sup>10</sup>, OH, SO<sub>3</sub>H and ( $C_1$ - $C_6$ )-alkylideneimino;

 $R^5$  is  $CONR^9R^{10}$  or  $CO_2R^{10}$  when m is 0 or 1; or  $R^5$  is  $NR^9R^{17}$  when m is 1;  $R^6$  is  $(C_1-C_3)$ -alkyl or  $(C_1-C_3)$ -haloalkyl;

 $\mathsf{R}^7$  is H, (C2-C6)-alkenyl, (C2-C6)-haloalkenyl, (C2-C6)-alkynyl, (C2-C6)-haloalkynyl, (C3-C7)-cycloalkyl,  $\mathsf{COR}^{11}$ ,  $\mathsf{COR}^{12}$ ,  $\mathsf{COR}^{13}$ ,  $\mathsf{-CO}_2\text{-}(\mathsf{C}_1\text{-}\mathsf{C}_6)$ -alkyl,  $\mathsf{-CO}_2\text{-}(\mathsf{CH}_2)_q\mathsf{R}^{11}$ ,  $\mathsf{-CO}_2\text{-}(\mathsf{CH}_2)_q\mathsf{R}^{13}$ ,  $\mathsf{-CO}_2\text{-}(\mathsf{C}_3\text{-}\mathsf{C}_7)$ -cycloalkyl,  $\mathsf{-CO}_2\text{-}(\mathsf{C}_1\text{-}\mathsf{C}_6)$ -alkyl-(C3-C7)-cycloalkyl,  $\mathsf{CO}_2\text{-}(\mathsf{C}_2\text{-}\mathsf{C}_6)$ -alkenyl,  $\mathsf{-CH}_2\mathsf{R}^{11}$  or  $\mathsf{CH}_2\mathsf{R}^{13}$ ; or (C1-C6)-alkyl unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C1-C6)-alkoxy, (C1-C6)-haloalkoxy, (C3-C7)-cycloalkyl,  $\mathsf{S(O)}_p\mathsf{R}^{14}$ ,  $\mathsf{CO}_2\text{-}(\mathsf{C}_1\text{-}\mathsf{C}_6)$ -alkyl,  $\mathsf{-O(C=O)}$ -(C1-C6)-alkyl,  $\mathsf{NR}^9\mathsf{R}^{10}$ ,  $\mathsf{CONR}^9\mathsf{R}^{10}$ ,  $\mathsf{SO}_2\mathsf{NR}^9\mathsf{R}^{10}$ ,  $\mathsf{OH}$ ,  $\mathsf{CN}$ ,  $\mathsf{NO}_2$ ,  $\mathsf{OR}^{11}$ ,  $\mathsf{OR}^{13}$ ,  $\mathsf{NR}^{10}\mathsf{COR}^9$ ,  $\mathsf{NR}^{10}\mathsf{SO}_2\mathsf{R}^{14}$  and  $\mathsf{COR}^{12}$ ;

 $R^8$  is  $R^9$ ,  $CO-R^9$ ,  $CO-R^{11}$ ,  $CO_2R^{12}$  or  $CO-(C_1-C_6)$ -alkyl substituted by amino;  $R^9$  is H,  $(C_1-C_6)$ -alkyl,  $(C_1-C_6)$ -haloalkyl,  $(C_2-C_6)$ -alkenyl,  $(C_2-C_6)$ -haloalkynyl,  $(C_3-C_7)$ -cycloalkyl or  $-(C_1-C_6)$ -alkyl- $(C_3-C_7)$ -cycloalkyl;

 $R^{10}$  is  $R^9$ ,  $-[(C_1-C_6)-alkyl]_{q^-}R^{11}$ ,  $(C_1-C_3)-alkoxy-(C_1-C_3)-alkyl-$ ,

 $(C_1-C_3)$ -alkoxy- $(C_1-C_3)$ -alkoxy- $(C_1-C_3)$ -alkyl- or  $(C_1-C_3)$ -alkyl- $S(O)_p$ - $(C_1-C_3)$ -alkyl-; or  $R^9$  and  $R^{10}$  or  $R^9$  and  $R^{17}$  each together with the respective attached N atom form a four- to seven-membered saturated ring which optionally contains an additional hetero atom in the ring which is selected from O, S and N, the ring being unsubstituted or substituted by one or more radicals selected from the group consisting of halogen,  $(C_1-C_6)$ -alkyl,  $(C_1-C_6)$ -haloalkyl and  $CO_2$ - $(C_1-C_6)$ -alkyl;  $R^{11}$  is phenyl unsubstituted or substituted by one or more radicals selected from the group consisting of halogen,  $(C_1-C_6)$ -alkyl,  $(C_1-C_6)$ -haloalkyl,  $(C_1-C_6)$ -alkoxy,  $(C_1-C_6)$ -haloalkoxy,  $(C_1-C_6)$ -alkoxy,  $(C_1-C_6)$ -haloalkoxy,  $(C_1-C_6)$ -alkoxy,  $(C_1-C_6)$ -haloalkoxy,  $(C_1-C_6)$ -alkyl,  $(C_1-C_6)$ -alkylideneimino;

 $R^{12}$  is  $(C_1-C_6)$ -alkyl or  $(C_1-C_6)$ -haloalkyl;

 $R^{13}$  is heterocyclyl unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C<sub>1</sub>-C<sub>4</sub>)-alkyl, (C<sub>1</sub>-C<sub>4</sub>)-haloalkyl, (C<sub>1</sub>-C<sub>4</sub>)-alkoxy,  $S(O)_pR^{12}$ , OH and oxo;

 $R^{14}$  is  $(C_1-C_6)$ -alkyl,  $(C_1-C_6)$ -haloalkyl,  $(C_3-C_7)$ -cycloalkyl or  $-(C_1-C_6)$ -alkyl- $(C_3-C_7)$ -cycloalkyl;

 $R^{15}$  is H,  $(C_1-C_6)$ -alkyl,  $(C_1-C_6)$ -haloalkyl,  $(C_3-C_7)$ -cycloalkyl or  $-(C_1-C_6)$ -alkyl- $(C_3-C_7)$ -cycloalkyl;

R<sup>16</sup> is phenyl unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C<sub>1</sub>-C<sub>6</sub>)-alkyl, (C<sub>1</sub>-C<sub>6</sub>)-haloalkyl, (C<sub>1</sub>-C<sub>6</sub>)-alkoxy, (C<sub>1</sub>-C<sub>6</sub>)-haloalkoxy, CN, NO<sub>2</sub>, S(O)<sub>p</sub>R<sup>12</sup>, COR<sup>15</sup>, COOH, COOR<sup>12</sup>, CONR<sup>9</sup>R<sup>15</sup>, SO<sub>2</sub>NR<sup>9</sup>R<sup>15</sup>, NR<sup>9</sup>R<sup>15</sup> and OH;

 $R^{17}$  is  $R^{10}$ ,  $CO_2(C_1-C_6)$ -alkyl,  $-CH_2CO_2(C_1-C_6)$ -alkyl,  $CO_2CH_2R^{18}$  or  $CO(C_1-C_6)$ -alkyl;  $R^{18}$  is phenyl unsubstituted or substituted by one or more radicals selected from the group consisting of halogen,  $(C_1-C_6)$ -alkyl,  $(C_1-C_6)$ -haloalkyl and  $(C_1-C_6)$ -alkoxy; n and p are each independently 0, 1 or 2;

m and q are each independently 0 or 1;

r and s are each independently 0 or 1; and

each heterocyclyl in the above-mentioned radicals is independently a heterocyclic radical having 3 to 7 ring atoms and 1, 2 or 3 hetero atoms in the ring selected from the group consisting of N, O and S;

or a pesticidally acceptable salt thereof.

- 2. A compound or a salt thereof as claimed in claim 1 wherein:  $R^{10} \text{ is } R^9, -[(C_1\text{-}C_6)\text{-alkyl}]_q\text{-}R^{11}, (C_1\text{-}C_3)\text{-alkoxy-}(C_1\text{-}C_3)\text{-alkyl- or} \\ (C_1\text{-}C_3)\text{-alkoxy-}(C_1\text{-}C_3)\text{-alkoxy-}(C_1\text{-}C_3)\text{-alkyl-;} \\ R^{17} \text{ is } R^{10}, CO_2(C_1\text{-}C_6)\text{-alkyl}, CO_2CH_2R^{18} \text{ or } CO(C_1\text{-}C_6)\text{-alkyl;} \text{ and the other values} \\ \text{are as defined in formula (I).}$
- 3. A compound or a salt thereof as claimed in claim 1 or 2 wherein R<sup>1</sup> is CN.
- 4. A compound or a salt thereof as claimed in claim 1, 2 or 3 wherein R<sup>2</sup> is Cl.
- 5. A compound or a salt thereof as claimed in any one of claims 1 to 4 wherein R³ is CF₃.
- 6. A compound or a salt thereof as claimed in any one of claims 1 to 5 wherein A is  $(C_1-C_6)$ -alkylene; or is  $(C_1-C_6)$ -alkylene in which a carbon in the chain is replaced by O, S, SO, SO<sub>2</sub> or NR<sup>8</sup> with the proviso that the replacing group is not bonded to the adjacent R<sup>5</sup> or carbonyl group; or is phenyl unsubstituted or substituted by one or

more radicals selected from the group consisting of halogen,  $(C_1-C_4)$ -alkyl,  $(C_1-C_4)$ -haloalkyl,  $(C_1-C_4)$ -alkoxy, CN and NO<sub>2</sub>; or is pyridyl unsubstituted or substituted by one or more radicals selected from the group consisting of halogen,  $(C_1-C_4)$ -alkyl,  $(C_1-C_4)$ -haloalkyl and  $(C_1-C_4)$ -alkoxy.

- 7. A compound or a salt thereof as claimed in any one of claims 1 to 6 wherein  $R^6$  is  $CF_3$ .
- 8. A compound or a salt thereof as claimed in any one of claims 1 to 7 wherein R¹ is CN:

R<sup>2</sup> is Cl;

R<sup>3</sup> is CF<sub>3</sub>;

W is CR4 and R4 is Cl;

A is  $(C_1-C_6)$ -alkylene; or is  $(C_1-C_6)$ -alkylene in which a carbon in the chain is replaced by O, S, SO, SO<sub>2</sub> or NR<sup>8</sup> with the proviso that the replacing group is not bonded to the adjacent R<sup>5</sup> or carbonyl group; or is phenyl unsubstituted or substituted by one or more radicals selected from the group consisting of halogen,  $(C_1-C_2)$ -alkyl,  $(C_1-C_2)$ -haloalkyl,  $(C_1-C_2)$ -alkoxy, CN and NO<sub>2</sub>; or is pyridyl unsubstituted or substituted by one or more radicals selected from the group consisting of halogen,  $(C_1-C_2)$ -alkyl,  $(C_1-C_2)$ -haloalkyl and  $(C_1-C_2)$ -alkoxy;

R<sup>5</sup> is CONR<sup>9</sup>R<sup>10</sup> or CO<sub>2</sub>R<sup>10</sup> when m is 0 or 1; or R<sup>5</sup> is NR<sup>9</sup>R<sup>17</sup> when m is 1;

 $R^6$  is  $(C_1-C_2)$ -alkyl or  $(C_1-C_2)$ -haloalkyl;

R<sup>7</sup> is hydrogen or (C<sub>1</sub>-C<sub>2</sub>)-alkyl;

R<sup>8</sup> is R<sup>9</sup>. CO-R<sup>9</sup> or CO-R<sup>11</sup>;

R9 is H or (C1-C6)-alkyl;

 $R^{10}$  is H,  $(C_1-C_6)$ -alkyl,  $(C_1-C_6)$ -haloalkyl,  $(C_2-C_6)$ -alkenyl,  $(C_2-C_6)$ -haloalkenyl,  $(C_3-C_6)$ -alkynyl,  $(C_3-C_6)$ -haloalkynyl,  $(C_3-C_7)$ -cycloalkyl,  $-(C_1-C_6)$ -alkyl- $-(C_3-C_7)$ -cycloalkyl or  $-(CH_2)_0R^{11}$ ; or

 $R^9$  and  $R^{10}$  together with the attached N atom form a five- or six-membered saturated ring which optionally contains an additional hetero atom in the ring which is selected from O, S and N, the ring being unsubstituted or substituted by one or more radicals selected from the group consisting of halogen and  $(C_1-C_2)$ -alkyl;

 $R^{11}$  is phenyl unsubstituted or substituted by one or more radicals selected from the group consisting of halogen, (C<sub>1</sub>-C<sub>2</sub>)-alkyl, (C<sub>1</sub>-C<sub>2</sub>)-haloalkyl, (C<sub>1</sub>-C<sub>2</sub>)-alkoxy, CN, NO<sub>2</sub>, S(O)<sub>p</sub>R<sup>12</sup> and NR<sup>9</sup>R<sup>15</sup>;

 $R^{12}$  is  $(C_1-C_2)$ -alkyl or  $(C_1-C_2)$ -haloalkyl;

 $R^{15}$  is H,  $(C_1-C_2)$ -alkyl or  $(C_1-C_2)$ -haloalkyl;

 $R^{17}$  is  $R^{10}$ ,  $CO_2(C_1-C_2)$ -alkyl,  $CO_2CH_2R^{18}$  or  $CO(C_1-C_2)$ -alkyl; and

 $R^{18}$  is phenyl unsubstituted or substituted by one or more radicals selected from the group consisting of halogen,  $(C_1-C_2)$ -alkyl,  $(C_1-C_2)$ -haloalkyl and  $(C_1-C_2)$ -alkoxy.

- 9. A process for the preparation of a compound of formula (I) or a salt thereof as defined in any one of claims 1 to 8, which process comprises:
- a) where R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, W, A, m and n are as defined in claim 1, reacting a compound of formula (II):

wherein  $R^1$ ,  $R^2$ ,  $R^3$ ,  $R^6$ ,  $R^7$ , W and n are as defined in claim 1, with a compound of formula (III):

wherein R<sup>5</sup>, A and m are as defined in claim 1 and L is a leaving group; or

b) where R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>5</sup>, R<sup>6</sup>, W, A, m and n are as defined in claim 1, and R<sup>7</sup> is as defined in claim 1 with the exclusion of hydrogen, the alkylation or acylation of the corresponding compound of formula (I) in which R<sup>7</sup> is hydrogen, with a compound of formula (IV):

wherein R<sup>7</sup> is as defined in claim 1 with the exclusion of hydrogen and L<sup>1</sup> is a leaving group; or

c) where R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>6</sup>, R<sup>7</sup>, W, A and n are as defined in claim 1, R<sup>5</sup> is NR<sup>9</sup>R<sup>10</sup> and m is 1, the nucleophilic substitution of a corresponding compound of formula (V):

$$R^{6}S(O)_{n}$$
 $R^{7}$ 
 $N$ 
 $N$ 
 $N$ 
 $R^{1}$ 
 $R^{2}$ 
 $R^{3}$ 
 $R^{3}$ 
 $R^{3}$ 

wherein R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>6</sup>, R<sup>7</sup>, A, W and n are as defined in claim 1, m is 1 and L<sup>2</sup> is a leaving group, with a compound of formula (VI):

H-NR9R10

(VI)

wherein R9 and R10 are as defined in claim 1; or

d) where R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, W, A, L<sup>2</sup>, m and n are as defined in claim 1, the acylation of a compound of formula (II) with a compound of formula (VII):

(VII)

wherein L2, A and m are as defined in claim 1; or

- e) where R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>5</sup>, R<sup>6</sup>, R<sup>7</sup>, W, A and m are as defined in claim 1, and n is 1 or 2, oxidising a corresponding compound in which n is 0 or 1; and
- f) if desired, converting a resulting compound of formula (I) into a pesticidally acceptable salt thereof.
- 10. A pesticidal composition comprising a compound of formula (I) or a pesticidally acceptable salt thereof as defined in any one of claims 1 to 8, in association with a pesticidally acceptable diluent or carrier and/or surface active agent.

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- 11. The use of a compound of formula (I) or a salt thereof according to any one of claims 1 to 8 or of a composition according to claim 10, for the preparation of a veterinary medicament.
- 12. The use of a compound of formula (I) or a salt thereof according to any one of claims 1 to 8 or of a composition according to claim 10 for the control of pests.
- 13. A method for the control of pests at a locus which comprises the application of an effective amount of a compound of formula (I) or a salt thereof according to any one of claims 1 to 8 or of a composition according to claim 10.